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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,392	01/28/2004	Gerald Elson	GP- 302896	3326

7590 05/16/2007  
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EXAMINER
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BOTTORFF, CHRISTOPHER

ART UNIT	PAPER NUMBER
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3618

MAIL DATE	DELIVERY MODE
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05/16/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/766,392	<b>Applicant(s)</b> ELSON ET AL.	
	<b>Examiner</b> Christopher Bottorff	<b>Art Unit</b> 3618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3-11,14-23,27 and 28 is/are pending in the application.
- 4a) Of the above claim(s) 4-8 and 17-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,9-11,14-16,22,23,27 and 28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

The amendment filed April 18, 2007 has been entered. Claims 2, 12, 13, and 24-26 are canceled. Claims 1, 3-11, 14-23, 27, and 28 are pending. Claims 4-8 and 17-21 are withdrawn as being directed to non-elected species. Claims 1, 3, 9-11, 14-16, 22, 23, 27, and 28 have been considered.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 9-11, 14-16, 22, 23, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riemer et al. US 5,662,184 in view of Sellergren US 6,676,159 and Kawasaki et al. US 6,953,099.

Riemer et al. disclose a motor vehicle comprising a frame assembly 2 and a power train supported on the frame assembly. See Figure 1b. The power train includes a fuel cell 15 operable to convert a hydrogen-containing gas fuel and an oxidant into electrical energy and a motor 13 electrically connected to the fuel cell 15 to convert the electrical energy into rotary movement of a shaft 9. See Figure 1b and column 2, lines 4-27. A radiator 33 is supported on the frame assembly. See Figure 1b. As is conventional in the art, the radiator 33 is in fluid communication with the power train such that a cooling fluid circulates therethrough. A set of wheels 10 is rotatably

supported on the frame assembly and at least one of the set of wheels 10 is operably coupled to the shaft 9 for driving the at least one of the set of wheels 10. See Figure 1b. A fuel tank 17 is supported on the frame assembly and is in fluid communication with the fuel cell 15 to provide a primary source of the hydrogen-containing gas fuel thereto. See Figure 1b and column 2, lines 12-27. A fluid storage volume 32 is a reserve tank in fluid communication with the fuel cell system 15 to provide an operational fluid of hydrogen-containing gas fuel thereto. See Figure 1b. Also, the fluid storage volume 32 is substantially less than the fuel tank 17 by volume. See Figure 1b.

Reimer et al. do not disclose the details of the frame assembly structure, including a cross frame rail and a longitudinal rail with a liner, an auxiliary frame structure coupled to the frame assembly, and providing the fluid storage volume within a hydrogen storage media in the cross frame rail and longitudinal rail of the frame assembly structure. However, Sellergren teaches the desirability of providing a fluid storage volume within a hydrogen storage media in a cross frame rail and a longitudinal rail of a vehicle frame assembly. See Figures 1 and 2; column 4, lines 30-40 and 52-55; and column 2, lines 37-40 and 61-64. Sellergren further teaches providing the frame assembly with a liner. See Figure 2 and column 5, lines 4-13.

From the teachings of Sellergren, providing the frame assembly of Reimer et al. with a cross frame rail and a longitudinal rail and providing the fluid storage volume of Reimer et al. within a hydrogen storage media in the cross frame rail and the longitudinal rail would have been obvious to one of ordinary skill in the art at the time the invention was made. This would provide the vehicle with effective structural support

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and would efficiently utilize the space within the vehicle that would otherwise be occupied by reservoir 32 while providing safe and effective storage for the hydrogen fuel. Providing the frame assembly with a liner would have been obvious to one of ordinary skill in the art at the time the invention was made. This would help minimize the leakage of hydrogen gas.

Furthermore, Kawasaki et al. teach the desirability of coupling an auxiliary frame structure 70, 80 to a frame assembly. See Figure 1. The auxiliary frame structure has a pair of longitudinally oriented rails extending generally parallel to elongate rails of the frame assembly, and the auxiliary frame structure defines a crush zone. See Figures 1-3. Coupling an auxiliary frame structure to the frame assembly of Reimer et al. would have been obvious to one of ordinary skill in the art at the time the invention was made. This would help further protect the fuel cell system.

### ***Response to Arguments***

Applicant's arguments with respect to the previous terms of rejection have been considered but are moot in view of the new grounds of rejection.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Iwatsuki and Mishima et al. disclose auxiliary frames coupled to motor vehicle frame assemblies.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Bottorff whose telephone number is (571) 272-6692. The examiner can normally be reached on Mon.-Fri. 7:30 a.m. - 4:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Ellis can be reached on (571) 272-6914. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Christopher Bottorff